AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions and listings of claims in the application.

LISTING OF CLAIMS

1. (Currently Amended) A manufacturing method of an optical communication module that optically couples ~~an~~ at least one optical device and an optical transmitter, comprising:

providing a tapered through-hole in a substrate, the tapered through-hole having a first end in a first side of the substrate and a second end in a second side of the substrate, the first end being smaller in diameter than the second end;

housing ~~an~~ a first optical device within the tapered through-hole between the first and second ends, the first optical device having an ~~, whose~~ optical transmission point substantially ~~coincides~~ coincident with a geometrical center ~~in~~ of the tapered through-hole; and

inserting an optical transmitter having a larger diameter than a diameter of the optical device in the tapered through-hole housing the optical device, thereby aligning a core of the optical transmitter with the geometrical center of the tapered through-hole.

2. (Currently Amended) The manufacturing method of the optical communication module according to claim 1, further comprising:

housing ~~an~~ a second optical device within the tapered through-hole between the first and second ends after housing the first optical device, the second optical device having a ~~, whose~~ diameter ~~is~~ larger than the diameter of the first optical device and smaller than the diameter of the optical transmitter ~~in the tapered through-hole, after housing the optical device~~.

3. (Currently Amended) A manufacturing method of an optical communication module that optically couples an optical device and an optical transmitter, comprising:

providing a double-ended tapered through-hole having a constriction portion inside of a substrate, a first opening in a first side of the substrate, and a second opening in a second side ~~and openings on both sides~~ of the substrate so as to be opened bi-directionally;

housing ~~an~~ a first optical device within the double-ended tapered through-hole between the constriction portion and the first opening, ~~from one opening in the double-ended tapered through-hole, whose~~the first optical device having an optical transmission point substantially ~~coincides~~ coincident with a geometrical center of the double-ended tapered through-hole and having ~~, and which has~~ a smaller diameter than a diameter of ~~one~~ the first opening of the double-ended tapered through-hole; ~~and~~

housing a second optical device within the double-ended tapered through-hole between the constriction portion and the second opening, the second optical device having a diameter smaller than the diameter of the second opening; and

~~housing~~ inserting an optical transmitter into the second opening of the double-ended tapered through-hole after housing the second optical device, the optical transmitter having a diameter larger than a diameter of the second optical device~~, from the other opening in the double-ended tapered through-hole, whose diameter is~~ and smaller than a diameter of the ~~other~~ second opening of the double-ended tapered through-hole.

4. (Cancelled)

5. (Currently Amended) The manufacturing method of the optical communication module according to claim 1, further comprising:

forming an electrode wiring for conduction with an electrode provided in a part of the first optical device before housing the first optical device.

6. (Currently Amended) The manufacturing method of the optical communication module according to claim 1, further comprising:

forming an electrode wiring for conduction with an electrode provided in the first optical device after housing the first optical device.

7. (Currently Amended) The manufacturing method of the optical communication module according to claim 1, wherein ~~the step of forming~~providing the tapered through-hole comprises:

irradiating the substrate with a femto-second pulse laser ~~and~~ while relatively moving ~~a~~ the femto-second pulse laser in an axial direction of the tapered through-hole; and

removing a region of the substrate changed by the irradiation of the femto-second pulse laser so that the tapered through-hole emerges.

8. (Currently Amended) The manufacturing method of the optical communication module according to claim 1, comprising:

fixing at least one of a periphery of the first ~~housed~~ optical device and a periphery of the ~~housed~~ optical transmitter with resin after at least one of housing ~~the at least one of~~ the first optical device and inserting the optical transmitter.

9. (Currently Amended) The manufacturing method of the optical communication module according to claim 1, wherein, in the step of housing the first optical device, the first optical device includes a side surface contacting an internal wall of the tapered through-hole at an inclination corresponding to a tapered shape of the internal wall of the tapered through-hole at a contacting position.

10. (Currently Amended) The manufacturing method of the optical communication module according to claim 9,

wherein the first optical device contacts the internal wall of the tapered through-hole in a vicinity of a bottom surface of the substrate when housed in the tapered through-hole.

11. (Original) An electronic apparatus comprising the optical communication module manufactured by the manufacturing method of the optical communication module according to claim 1.

12. (Currently Amended) An optical communication module that optically couples an optical device and an optical transmitter, comprising:

a substrate provided with a tapered through-hole having a first opening in a first side of the substrate and a second opening in a second side of the substrate, the first opening having ~~with~~ a larger diameter than a diameter of ~~an~~ the optical device ~~to be housed~~ and a diameter of an end surface of ~~an~~ the optical transmitter, ~~to be housed, and~~ a the second opening having ~~with~~ a smaller diameter than the diameter of the optical device and the diameter of the end surface of the optical transmitter; and

an electrode wiring for the optical device that is formed from one of the first opening and the second opening along an internal wall of the tapered through-hole.

13. (Currently Amended) An optical communication module that optically couples an optical device and an optical transmitter, comprising:

a substrate provided with a double-ended tapered through-hole having a constriction portion inside of the substrate, a first opening in a first side of the substrate, and a second opening in a second side of the substrate so as to be opened bi-directionally, the constriction portion having ~~with~~ a smaller diameter than a diameter of the optical device ~~to be housed~~ and a diameter of an end surface of the optical transmitter ~~to be housed and having openings on both sides of the substrate so as to be opened bi-directionally~~; and

an electrode wiring for the optical device that is formed, at least, from one of the first and second openings along an internal wall of the double-ended tapered through-hole.